

# Math 9: Inequalities Review

Name: \_\_\_\_\_ Block: \_\_\_\_\_

**Multiple Choice:** Write the letter that corresponds to the correct answer in the space provided next to each question. (1 mark each)

1. Mr. Magee asked his class to write an inequality to represent the solution set for the number line below.



Which students correctly represented the solution set given by the graph?

Erik	$x < 3$
Marissa	$x > 3$
Laurie	$3 < x$
Steven	$3 > x$

- a) All four students      b) Erik and Steven      c) Marissa and Laurie      d) Erik

2. Which number is **NOT** a solution for the inequality  $m + 5 > -4$

- a)  $m = 9$       b)  $m = -9$       c)  $m = 1$       d)  $m = -1$

3. Jeff had a bad game. He made at most 10 shots.

Which number is **NOT** a good guess for the actual number of shots he made?

- a) 8      b) 9      c) 10      d) 11

4. John has been told that the meeting he will be attending will be at least 3 hours.

If  $x$  represents the time in hours, which inequality best represents this situation?

- a)  $x < 3$       b)  $x \leq 3$       c)  $x > 3$       d)  $x \geq 3$

Fill in the blank *with the appropriate word(s) or numbers that make it a true statement.* (open, closed, equation, inequality, boundary point, solution, zero)

5. The \_\_\_\_\_ may or may not include the boundary point.

6. A(n) \_\_\_\_\_ is a mathematical expressions comparing expressions that may not be equal.

7. A(n) \_\_\_\_\_ circle/dot means the boundary point is part of the solution.

8. "4 is greater than  $x$ " is written algebraically as \_\_\_\_\_

## Written Response

Part A: Identify and explain the error in the following. Then, write the correct solution.

$$4m + 2 < 6$$

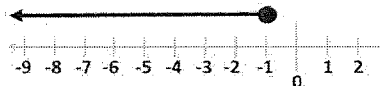
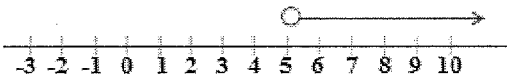
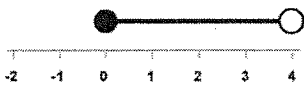
$$\begin{array}{r} -2 \quad -2 \\ 4m > 4 \end{array}$$

$$4m > 4$$

$$/4 \quad /4$$

$$m > 1$$

Part B: Complete the chart:

IN WORDS	GRAPHICALLY	ALGEBRAICALLY
		$3 > x$
A number is greater than -4.		
		
		
		

Part C: Write an inequality for each situation and use it to answer the question.

1) Two full water storage tanks are being drained for maintenance. The first tank holds 800 L of water and drains at a rate of 18 L/min. The second tank holds 500 L and drains at 7 L/min. When will the first tank contain less water than the second? Use "t" for time.

2) The student council is considering two different companies to print the school's yearbooks. Great Graphics charges \$250 plus \$12.25 per book. Print Express charges \$900 plus \$9.50 per book. How many orders for yearbooks would make Print Express the better option? Use "Y" for number of yearbooks.

Part D: a) Solve each inequality, b) Graph the solution on a number line, c) Check the boundary point, d) Check the inequality solution (arrow).

1)  $2x + 5 > -11$



Checks

Boundary Point:

Solution:

2)  $17 - 3x \leq 7x + 3$

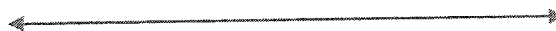


Checks

Boundary Point:

Solution:

3)  $3.4 - 1.3y < 3(0.5y - 2.2)$



Checks

Boundary Point:

Solution:

4)  $\frac{1}{2}m - \frac{1}{3} \geq 3 - \frac{1}{3}m$



Checks

Boundary Point:

Solution: